

IN THE CLAIMS

Please amend the claims as follows:

1. (original) A method for the temporal synchronization of clocks (15) which are assigned to nodes (10) that communicate via a communication medium (5), characterized by the following steps:

- at least for the nodes (10) that are to be synchronized: acquiring (110) state values which are dependent on a time base of the nodes (10);

- for all acquired state values: filing (120) the acquired state value at a corresponding position in a first list (L) comprising (k+1) positions, if the acquired state value is smaller than the (k+1) smallest element or is smaller than or equal to the (k+1) smallest element of the list (L) and where k is a predefinable error tolerance;

- for all acquired state values: filing (130) the acquired state value at a corresponding position in a second list (H) comprising (k+1) positions, if the acquired state value is greater than the (k+1) greatest element or is greater than or equal to the (k+1) greatest element of the list (H);

- forming (160) a mean value (M) from the (k+1) smallest element of the first list (L) and the (k+1) greatest element of the

second list (H), if $n \geq (2k+2)$, where n is the number of acquired state values;

- determining (170) a correction value (K) as a function of the mean value (M); and

- correcting (180) the clocks (15) that are to be synchronized such that a current state value of this clock (15) takes the correction value into account.

2. (original) A method as claimed in claim 1, characterized in that the filing (120, 130) of the determined state values in the first list (L) and/or in the second list (H) is carried out sequentially.

3. (currently amended) A method as claimed in claim 1 ~~or 2~~, characterized in that the first list (L) is formed by corresponding registers (L0, L1, ..., Lk) and/or the second list (H) is formed by corresponding registers (H0, H1, ..., Hk).

4. (currently amended) A method as claimed in ~~any of the preceding claims~~ claim 1, characterized in that

- the first list (L) is initialized with values which are greater than the greatest state value that is to be expected; and/or

- the second list (H) is initialized with values which are smaller than the smallest state value that is to be expected.

5. (currently amended) A method as claimed in ~~any of the preceding claims~~claim 1, characterized in that

- during filing (120) of an acquired state value in the first list (L) a sorting in terms of the size of the stored state values is retained so that $\text{value}(L_0) \geq \text{value}(L_1) \geq \dots \geq \text{value}(L_k)$ is always true, where L_0, L_1, \dots, L_k denote the $(k+1)$ positions of the list (L) and $\text{value}(L_i)$ is the value at a position (L_i) ; and

- during filing (130) of an acquired state value in the second list (H) a sorting in terms of the size of the stored state values is retained so that $\text{value}(H_0) \leq \text{value}(H_1) \leq \dots \leq \text{value}(H_k)$ is always true, where H_0, H_1, \dots, H_k denote the $(k+1)$ positions of the list (H) and $\text{value}(H_i)$ is the value at a position (H_i) .

6. (currently amended) A method as claimed in ~~any of the preceding claims~~claim 1, characterized in that a state value (Z) is stored at a position (L_i) of the first list (L) as a function of the following steps:

- the positions (L_0, L_1, \dots, L_k) are searched for a position (L_i) of the first list (L), so that the following is true:

- $\text{value}(L_0) \geq \text{value}(L_1) \geq \dots \geq \text{value}(L_i) \geq Z \geq \text{value}(L_{i+1}) \geq \dots$
 $\geq \text{value}(L_k)$;

- if no such position (L_i) is found, then the state value (Z) is rejected;

- if such a position (L_i) is found, then for all positions $\{(L_j \mid 0 \leq j < i)\}$ the value $\text{value}(L_j)$ stored at the position (L_j) is replaced by the value $\text{value}(L_{j+1})$ stored at the position L_{j+1} and the state value (Z) is stored at the position (L_i) of the list (L) .

7. (currently amended) A method as claimed in ~~any of the preceding claims~~ claim 1, characterized in that a state value (Z) is stored at a position (H_i) of the second list (H) as a function of the following steps:

- the positions (H_0, H_1, \dots, H_k) are searched for a position (H_i) of the second list (H) , so that the following is true:

- $\text{value}(H_0) \leq \text{value}(H_1) \leq \dots \leq \text{value}(H_i) \leq Z \leq \text{value}(H_{i+1}) \leq \dots$
 $\leq \text{value}(H_k)$;

- if no such position (H_i) is found, then the state value (Z) is rejected;

- if such a position (H_i) is found, then for all positions $\{(H_j \mid 0 \leq j < i)\}$ the value $\text{value}(H_j)$ stored at the position H_j is

replaced by the value $\text{value}(H(j+1))$ stored at the position $H(j+1)$ and the state value (Z) is stored at the position (H_i) of the list (H) .

8. (currently amended) A method as claimed in ~~any of the preceding claims~~claim 1, characterized in that the following steps are carried out:

- as a function of an error tolerance (k) , a set (B) of predefinable end values $(\{B_0, B_1, \dots, B(k-1)\})$ is predefined such that

- $B_0 = 0$; $B_i \leq B(i+1)$, for all $i \in \{0, 1, \dots, (k-1)\}$; and
- $2^j < B(j)$, for all $j \in \{1, \dots, (k)\}$;
- if $B_k > n$, a value i for $i \in \{0, 1, \dots, (k-1)\}$ is selected as a function of the number n of acquired state values such that the condition $B_i \leq n < B(i+1)$ is true;
- if $B_k \leq n$, $i = k$ is selected; and
- the mean value (M) is formed from the values $\text{value}(L(k-j))$ and $\text{value}(H(k-j))$ stored at the positions $L(k-i)$ and $H(k-i)$.

9. (currently amended) A method as claimed in ~~any of the preceding claims~~claim 1, characterized in that the following values are predefined:

- error tolerance $k = 2$;
- end value $B1 = 3$; and
- end value $B2 = 8$.

10. (original) A node (10) which communicates with other nodes (10) by means of a communication medium, characterized in that the node (10)

- has a clock (15);
- has means for acquiring state values, the state values being dependent on a time base of the node (10) and/or on a time base of the other nodes;
- has a first list (L) comprising $(k+1)$ positions and a second list (H) comprising $(k+1)$ positions;
- has means for filing (120) an acquired state value at a corresponding position of the first list (L);
- has means for filing (130) an acquired state value at a corresponding position of the second list (H);
- has means for forming (160) a mean value (M) from an element of the first list (L) and an element of the second list (H);
- has means for forming a correction value (K); and
- has means for correcting the clock (15).

11. (currently amended) A node (10) ~~as claimed in claim 10~~which communicates with other nodes (10) by means of a communication medium, characterized in that the node (10)

- has a clock (15);
- has means for acquiring state values, the state values being dependent on a time base of the node (10) and/or on a time base of the other nodes;
- has a first list (L) comprising (k+1) positions and a second list (H) comprising (k+1) positions;
- has means for filing (120) an acquired state value at a corresponding position of the first list (L);
- has means for filing (130) an acquired state value at a corresponding position of the second list (H);
- has means for forming (160) a mean value (M) from an element of the first list (L) and an element of the second list (H);
- has means for forming a correction value (K); and
- has means for correcting the clock (15), characterized in that a method as claimed in ~~any of claims 1 to 9~~claim 1 is carried out in the node (10).

12. (original) A communication system (1) which has a number of nodes (10) that communicate via a communication medium (5), characterized in that at least one node (10)

- has a clock (15);
- has means for acquiring state values;
- has a first list (L) comprising (k+1) positions and a second list (H) comprising (k+1) positions;
- has means for filing (120) an acquired state value at a corresponding position of the first list (L);
- has means for filing (130) an acquired state value at a corresponding position of the second list (H);
- has means for forming (160) a mean value (M) from an element of the first list (L) and an element of the second list (H);
- has means for forming a correction value (K); and
- has means for correcting the clock (15).

13. (currently amended) A communication system (1) ~~as claimed in claim 12~~ which has a number of nodes (10) that communicate via a communication medium (5), characterized in that at least one node (10)

- has a clock (15);
- has means for acquiring state values;
- has a first list (L) comprising (k+1) positions and a second list (H) comprising (k+1) positions;
- has means for filing (120) an acquired state value at a corresponding position of the first list (L);

- has means for filing (130) an acquired state value at a corresponding position of the second list (H);

- has means for forming (160) a mean value (M) from an element of the first list (L) and an element of the second list (H);

- has means for forming a correction value (K); and

- has means for correcting the clock (15), characterized in that a method as claimed in ~~any of claims 1 to 9~~claim 1 is carried out in at least one node (10).

14. (currently amended) A computer program which can be run on a computer, in particular on a microprocessor, characterized in that the computer program is programmed to carry out a method as claimed in ~~any of claims 1 to 9~~claim 1 when it is run on the computer.

15. (original) A computer program as claimed in claim 14, characterized in that the computer program is stored in a memory element, in particular in a Random Access Memory (RAM), a Read Only Memory (ROM) or a Flash memory.